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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/034,807	12/28/2001	Lisa Stadtmueller	00-1292-A	1489
20306	7590	04/19/2004	EXAMINER	
MCDONNELL BOEHNEN HULBERT & BERGHOFF LLP 300 S. WACKER DRIVE 32ND FLOOR CHICAGO, IL 60606				WYROZEBSKI LEE, KATARZYNA I
ART UNIT		PAPER NUMBER		
		1714		

DATE MAILED: 04/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/034,807	STADTMUELLER, LISA	
	<b>Examiner</b> Katarzyna Wyrozebski Lee	<b>Art Unit</b> 1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 30 January 2004.

2a) This action is **FINAL**.                            2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-30 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1-30 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_

4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_

5) Notice of Informal Patent Application (PTO-152)

6) Other: \_\_\_\_\_

In view of the applicant's amendment, mailed on 1/30/2004 following office action has been necessitated.

It is noted that the independent claims 1 and 2 contain a recitation of the intended use. In such event, the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

### ***Claim Objections***

1. Claims 28 and 30 are objected to because of the following informalities: octadecyl trimethyl amine is not ammonium ion. It is neutral compound. Appropriate correction is required.

The same argument applies to the amine compounds listed in claim 30 of the present invention. Also polyalkoxylated compound in claim 30 is not a primary amine.

***Claim Rejections - 35 USC § 102***

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1-9, 12, 13, 17-21 are rejected under 35 U.S.C. 102(e) as being anticipated by LAN (US 6,262,162).

The discussion of the disclosure of the prior art of LAN from paragraph 4 of the office action dated 9/30/2003 is incorporated here by reference.

***Claim Rejections - 35 USC § 103***

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 10-13, 15-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over LAN (US 6,262,162) in view of MOORMAN (US 5,319,014).

6. Claims 22-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over LAN (US 6,262,162) in view of GAUZAUSKAS (US 6,433,037).

The discussion of the disclosure of LAN from paragraphs 3 and GAZUKAS from paragraph 7 of the office action dated 9/30/2003 is incorporated here by reference.

7. Claims 14, 29, 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over LAN (US 6,262,162) in view of KAWASUMI (US 4,810,734)

The discussion of the disclosure of LAN from paragraphs 3 and KAWASUMI from paragraph 8 of the office action mailed on 9/30/2003 is incorporated here by reference.

8. Claims 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over LAN (US 6,262,162) in view of BRAGODIA (US 6,586,500).

The discussion of the disclosure of the LAN from paragraph 3 of the office action mailed on 9/30/2003 is incorporated here by reference.

The difference between the present invention and prior art of LAN are ammonium compounds listed in the newly added claims 27-30.

With respect to the above difference, the prior art of BRAGODIA discloses other ammonium compounds that are shown to intercalate the clay compound, undergo cation exchange and thereby increase basal spacing.

The ammonium compounds of BRAGODIA include methyl bis-hydroxyethyl hydrogenated tallow ammonium (col. 11, line 38-40) as well as polyoxymethylene substituted ammonium compound, wherein the other R groups can be hydrogen or alkyls 1-30 carbon atoms.

The ammonium compounds are utilized with clay in order to increase the interlayer spacing between clay platelets and thereby allowing polymeric component to be adsorbed between clay platelets more easily.

In the light of the above disclosure it would have been obvious to one having ordinary skill in the art to utilize the ammonium compounds of BRAGODIA in the disclosure of LAN and thereby obtain the claimed invention. Use of such ammonium compounds would still result in formation of nanocomposite.

In the amendment submitted on 1/30/2004 the applicant's amended the claims to require that the ammonium compound was either quaternary ammonium or primary alkyl ammonium compound. In view of the above amendment the prior art of MOORMAN has been overcome as a 102 rejection since the prior art of MOORMAN is silent with respect to the exact chemical structure of the organic modifier for the clay.

a) The applicant's further argued that the prior art of LAN no longer applies against present claims, since the prior art of LAN utilizes multicharged ammonium compound.

With respect to the above argument, the examiner disagrees. The present claims do not exclude multi-functional ammonium compounds. In addition to the above the examiner would like to point out that the ammonium compounds of LAN even though contain two ammonium functionalities are still quaternary ammonium compounds or primary ammonium compounds.

b) The prior art of LAN does not teach use of the material in dental application.

With respect to the above argument, the claims that are rejected solely by the prior art of LAN contain limitation of intended use, wherein the patentable weight is given to the composition and to the use of the composition. To dependent claims that require for the

composition to be a dental composition are further rejected by the combination of the prior art of LAN with other reference.

c) With respect to the other disclosures, since the applicant's arguments are considered moot since they were based on the prior art of MOORMAN. Newly restated rejections are based on the prior art of LAN.

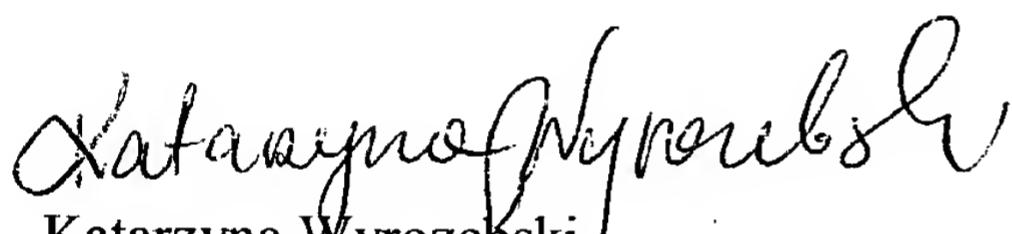
9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katarzyna Wyrozebski Lee whose telephone number is (571) 272-1127. The examiner can normally be reached on Mon-Thurs 6:30 AM-4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Katarzyna Wyrozebski  
Art Unit 1714  
April 14, 2004

EDWARD J. CAIN  
PRIMARY EXAMINER  
GROUP 1500

